WHAT IS CLAIMED IS:

1. An electron-emitting device comprising:

(A) fiber comprising carbon as a main ingredient, and

(B) a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a layer made of oxide semiconductor composed of a material selected from Ti, Zr, and Nb,

wherein the fiber comprising carbon as a main ingredient is disposed on the layer and the fiber comprising carbon as a main ingredient partially contains Pd.

2. The electron-emitting device according to claim 1, wherein the Pd is disposed at a position where the fiber comprising carbon as a main ingredient is in contact with the layer.

3. The electron-emitting device according to claim 1, wherein the Pd is disposed on an end of the fiber comprising carbon as a main ingredient or on an intermediate point of the fiber comprising carbon as a main ingredient.

4. The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient is grown via Pd particles disposed on the

layer.

5. The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient includes a graphen.

6. The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient includes a plurality of layered graphens.

7. The electron-emitting device according to claim 6, wherein the plurality of graphens is layered in an axial direction of the fiber comprising carbon as a main ingredient.

8. The electron-emitting device according to claim 1, wherein the fiber comprising carbon as a main ingredient is made of graphite nanofiber, carbon nanotube, amorphous carbon, or a mixture containing more than one of these.

9. The electron-emitting device according to claim 1, further comprising:

a first electrode on a surface of a substrate, and

a second electrode disposed on the surface of the substrate and spaced apart from the first electrode,

means for applying a potential higher than the

first electrode to the second electrode,

wherein at least a part of the layer is disposed on the first electrode.

10. The electron-emitting device according to claim 9, wherein the first electrode is larger in thickness than the second electrode.

11. The electron-emitting device according to claim 9, wherein the fiber comprising carbon as a main ingredient is disposed farther than the second electrode from the surface of the substrate.

12. The electron-emitting device according to claim 9, wherein the surface of the substrate has a step height such that the first electrode is higher than the second electrode.

13. An electron source comprising a plurality of electron-emitting devices,

wherein the electron-emitting device is an electron-emitting device according to any one of claims 1 to 12,

14. An image-forming apparatus comprising:

an electron source according to claim 13, and

an anode where an electron emitted from the

electron source comes into collision.

15. The image-forming apparatus according to claim 14, wherein the anode has a phosphor.

16. An electron-emitting device comprising:

(A) first and second electrodes disposed with a gap on a surface of a substrate,

(B) a plurality of fibers each comprising carbon as a main ingredient electrically connected with the first electrode, and

(C) means for applying a voltage higher than the first electrode to the second electrode,

wherein ends of the plurality of fibers each comprising carbon as a main ingredient are higher than a surface of the second electrode from the surface of the substrate, and

a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a layer made of oxide semiconductor composed of a material selected from Ti, Zr, and Nb is disposed between the first electrode and the plurality of fibers each comprising carbon as a main ingredient.

17. The electron-emitting device according to claim 16, wherein the layer and the plurality of fibers each comprising carbon as a main ingredient are

connected to each other via a catalyst material.

18. The electron-emitting device according to claim 17, wherein the catalyst material is a material selected from Pd, Ni, Fe, Co, and an alloy of these.

19. The electron-emitting device according to claim 16, wherein the first electrode is larger in thickness than the second electrode.

20. An electron source comprising a plurality of arranged electron-emitting devices,

wherein the electron-emitting device is an electron-emitting device according to any one of claims 16 to 19.

21. An image-forming apparatus comprising:

an electron source and

an image-forming member

wherein the electron source is an electron source according to claim 20.

22. An electron-emitting device comprising:

(A) fiber comprising carbon as a main ingredient,

(B) a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a layer made of oxide semiconductor composed of a material selected

from Ti, Zr, and Nb,

wherein the fiber comprising carbon as a main ingredient is disposed on the layer, and

the fiber comprising carbon as a main ingredient includes a plurality of layered graphens.

23. The electron-emitting device according to claim 22, wherein the plurality of graphens are layered in an axial direction of the fiber comprising carbon as a main ingredient.

24. The electron-emitting device according to claim 22, wherein the fiber comprising carbon as a main ingredient is grown via Pd particles disposed on the layer.

25. The electron-emitting device according to claim 22, wherein the fiber comprising carbon as a main ingredient contains Pd.

26. An electron source comprising a plurality of electron-emitting devices,

wherein the electron-emitting device is an electron-emitting device according to any one of claims 22 to 25.

27. A method for manufacturing an image-forming

apparatus,

the apparatus comprising an electron source and an image-forming member,

wherein the electron source is an electron source according to claim 26.

28. A method for manufacturing an electron-emitting device, which includes fiber comprising carbon as a main ingredient, comprising the steps of:

(A) providing a layer made of oxide composed of a material selected from Ti, Zr, Nb, and Al or a layer made of oxide semiconductor composed of a material selected from Ti, Zr, and Nb,

(B) disposing catalyst particles on the layer, and

(C) heating the substrate on which the catalyst particles are disposed in an atmosphere containing carbon compound.

29. The method for manufacturing the electron-emitting device according to claim 28, wherein the carbon compound is hydrocarbon gas.

30. The method for manufacturing the electron-emitting device according to claim 28, wherein the layer is formed on the electrode disposed on the substrate.

31. The method for manufacturing the electron-emitting device according to claim 28, wherein the layer is formed by the step of forming a conductive layer made of a material selected from Ti, Zr, Nb, and Al on the substrate and oxidizing a surface of the conductive layer.

32. The method for manufacturing the electron-emitting device according to claim 31, wherein the step of oxidizing the surface of the conductive layer is carried out by the step of forming a material of the catalyst particles on the surface of the conductive layer and oxidizing the material.

33. The method for manufacturing the electron-emitting device according to claim 28, wherein the catalyst particles are made of a material selected from Pd, Ni, Fe, Co, and an alloy of these.

34. A method for manufacturing an electron-emitting device, which includes a plurality of electron-emitting devices,

wherein the electron-emitting device is manufactured by the manufacturing method according to any one of claims 28 to 33.

35. A method for manufacturing an image-forming

apparatus, which includes an electron source and an image-forming member,

wherein the electron source is manufactured by the manufacturing method according to claim 34.